



UNITED STATES PATENT AND TRADEMARK OFFICE

See

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,771	09/10/2003	Eric Lacroix	33808F0343	4077

441 7590 02/19/2008
SMITH, GAMBRELL & RUSSELL
1130 CONNECTICUT AVENUE, N.W., SUITE 1130
WASHINGTON, DC 20036

EXAMINER

NGUYEN, NGOC YEN M

ART UNIT	PAPER NUMBER
----------	--------------

1793

MAIL DATE	DELIVERY MODE
-----------	---------------

02/19/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/658,771	Applicant(s) LACROIX ET AL.	
	Examiner Ngoc-Yen M. Nguyen	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8 and 11-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8 and 11-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8, 11-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the next to last "wherein" clause, it is unclear if the limitations required in this clause is for the fluorination step or for the "activated with HF" step.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8, 11-24 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Cheminal et al (5,523,500).

Cheminal '500 discloses a process for fluorination of halogenated hydrocarbons by gas phase catalysis (note column 1, lines 11-15).

As disclosed in "Fluorination Examples", HF and 1-chloro-2,2,2-trifluoroethane (F133a) are used as the reactants (note column 10, lines 61-67).

The catalyst is a catalyst based on nickel and chromium oxides (note claim 1 and Examples 1-5, 9, 11).

In the instant claims, the only positive limitation for the catalyst is the Ni/Cr between 0.02 and 0.4:1

In Examples 13-15, the HF/F133a ratio is from 3.8 to 4.2, the contacting time is from 3.8 to 4.1 seconds, the temperature is 350°C, the pressure is at atmospheric pressure, the reaction is carried in the absence of oxygen (note column 11, lines 21-24 and Table 1). Catalysts A and D have Ni/Cr atomic ratio of 0.34 and 0.07, respectively.

In examples 16-17, the HF/F133a ratio is 5.1, the contacting time is from 19.6 to 19.7 seconds, the temperature is 350°C, the pressure is at 1.5 MPa, the reaction is carried in the presence of oxygen (note column 12, lines 15-20 and Table 2). Catalyst e has a Ni/Cr atomic ratio of 0.37.

In Examples 18-20, the HF/F133a ratio is from 3.9 to 4.0, the contacting time is from 4.0 to 4.8 seconds, the temperature is 350°C, the pressure is at atmospheric pressure, the reaction is carried in the absence of oxygen (note column 12, lines 53-56 and Table 3). The catalyst can be regenerated by treatment under air at 300°C for 24 hours (note column 12, lines 57-61).

Cheminal '500 discloses a list of compounds that may be used as starting halogenated hydrocarbons which include $\text{CCl}_2=\text{CCl}_2$ (which is considered the same as "perchloroethylene) (note column 5, lines 7-19).

Cheminal '500 discloses that the fluorination reaction temperature depends on the reaction and the desired reaction products. Thus, for partial replacement of chlorine atoms by fluorine, the reaction is carried out at temperatures of between 50-350°C; the replacement of all the chlorine atoms may require temperatures of between 300-500°C (note column 5, lines 34-40).

The contact time also depends on the reaction and the desired products. In general it is between 3 and 100 seconds, preferably less than 30 seconds (note column 5, lines 41-45).

The HF/organic compounds molar ratio may vary between 1/1 to 20/1 (note column 5, lines 46-50) and the operating pressure is preferably between 1 and 20 bars absolute (0.1 to 2 MPa) (note column 5, lines 51-52).

The process of Cheminal '500 anticipates the claimed process.

Alternatively, if there is any difference due to the product-by-process limitations for making the catalyst used in the claimed process, it should be noted that the first three "wherein" clauses, the limitation of "by impregnation of an amorphous chromium III oxide with a solution of nickel compound" in claim 8 and claim 18 are considered as product-by-process limitations, however, when the examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to applicant to

Art Unit: 1793

establish that their product is patentably distinct and not the examiner to show the same process of making. *In re Brown*, 173 USPQ 685 and *In re Fessmann*, 180 USPQ 324. It should be noted that the BET specific surface area and the pore volume of the chromium oxide are for the starting chromium oxide, not for the catalyst final product.

Claims 8, 11-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chemical '500.

Chemical '500 discloses a process as stated above.

For other halogenated hydrocarbon beside the exemplified 1-chloro-2,2,2-trifluoroethane (F133a) (which is considered the same as the claimed "1-chloro-2,2,2-trifluoroethane"), it would have been obvious to one of ordinary skill in the art to use other reactants in the process of Chemical '500 as long as such reactants are halogenated hydrocarbons that can be fluorinated by HF.

For other values for fluorination temperature, contacting time, etc., it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the instantly claimed ranges through process optimization, since it has been held that there the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. See *In re Boesch*, 205 USPQ 215.

Applicant's arguments filed November 20, 2007 have been fully considered but they are not persuasive.

Applicants argue that Cheminal reference is the English-equivalent of EP No. 546,883 and the EP is discussed and analyzed as background on page 2 of the present specification and has been considered and listed as references cited in parent patent 6,649,560.

Since the EP reference was not English, the disclosure of such reference might not be fully appreciated.

Applicants argue and the Declaration states that a catalyst prepared with chromium oxide which does not observe the specific surface and pore volume criteria defined in the present invention gives markedly poor fluorination results. The Declaration also shows the effect of the Ni/Cr ratio on the fluorination ability of the catalyst, as well as the importance of the BET specific surface and pore volume properties.

Applicants' argument and the Declaration are fully considered but they are not persuasive because the claimed invention was not compared to the closest prior art, which is Cheminal '500. Section 716.02(b) of the MPEP states that "evidence of unexpected properties may be in the form of a direct or indirect comparison of the claimed invention with the closest prior art which is commensurate in scope with the claims. See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) and MPEP §716.02(d) - § 716.02(e). See *In re Blondel*, 499 F.2d 1311, 1317, 182 USPQ 294, 298 (CCPA 1974) and *In re Fouche*, 439 F.2d 1237, 1241-42, 169 USPQ 429, 433 (CCPA 1971) for examples of cases where indirect comparative testing was found sufficient to rebut a prima facie case of obviousness. It should be noted that the surface area and the

pore volume required in Applicants' claims are for the chromium starting material, not for the catalyst final product, it is not possible to compare the surface area and the pore volume of the claimed catalyst to those of the catalyst disclosed in Chemical '500.

Since the catalyst in the claimed invention was formed by impregnating an amorphous chromium III oxide with a solution of nickel compound, the nickel compound would at least take up some of the pore volume and thereby reducing both the surface area and the pore volume of the starting chromium oxide. There is no example in the Declaration to compare a process using the catalyst of Chemical '500, which can have high surface area, same Ni/Cr ratio and relative high pore volume, to the claimed process using the claimed catalyst.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

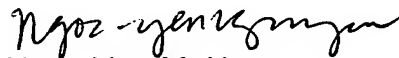
Art Unit: 1793

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc-Yen M. Nguyen whose telephone number is (571) 272-1356. The examiner is currently on a Part time schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Ngoc-Yen M. Nguyen
Primary Examiner
Art Unit 1793

nmn

Feb 4, 2008